EXAMENSARBETE I FINANSIELL MATEMATIK
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presenterar sitt examensarbete:

An analysis of the fundamental price drivers of EU ETS carbon credits

måndagen den 7 september kl. 16.15–17.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

Abstract

This thesis attempts to shed further light on price formation in the EU ETS carbon credits market. It explores relationships between credits and energy complex assets, including electrical power, coal, natural gas, and oil. Relationships are analysed using various statistical tools and methods, and explored in terms of fundamental economic relationships, correlation, and cointegration. Furthermore, the applicability of certain statistical tools, specifically correlation and multivariate regression, are examined. The switching price, according to the fundamentals theory, is found to be a poor indicator for valuing EUAs. Further, pairwise correlations between carbon credits, specifically EUAs and energy complex assets, are mostly found to be very noisy and weak. Power is found to be the only asset with significant correlation to EUAs. Weak correlations lead to weak multivariate regressions. Given these results, it is questionable whether correlation is a relevant tool for measuring relationships in the EU energy complex. To that end, cointegration is explored as a more relevant and robust measure. It is found that EUAs are cointegrated with natural gas and oil, but, surprisingly, not with power.

Price forecasters should observe that day-to-day EUA prices move in sync with electrical power. In the longer term, the EUA price is linked to oil, and, to a lesser extent, to natural gas.